

REMARKS

The foregoing amendment amends claim 1 to incorporate the feature recited in claim 3. Claim 3 is canceled. Claim 5 is amended to depend from amended claim 1. No new matter is added.

Now pending in the application are claims 1, 2, 5, and 6, of which claim 1 is independent.

I. Claim Rejection under 35 U.S.C. §103(a)

Claims 1-3, 5, and 6 are rejected under 35 U.S.C. §103(a) as being unpatentable over US 6,403,247 (hereafter “the Guthrie reference”) in view of US 2001/0033954 (hereafter “the Gyoten reference”). See Office Action, page 2. Applicants respectfully traverse the rejection in view of the amended claims.

A. Claim 1

Applicants respectfully submit that the combination of the Guthrie and Gyoten references does not teach or suggest that “said air-releasing passage is positioned above said coolant discharge passage at the other vertical end of the separator,” as recited in amended claim 1.

In the Office Action, the Examiner asserts that the coolant gas vent (742) described in Figure 11 of the Guthrie reference corresponds to the air releasing passage recited in claim 1. See Office Action, page 3. Applicants respectfully disagree.

In Figure 11, the Guthrie reference describes that the coolant gas vent (742) is provided at the top side of the stack (702) and the coolant inlet manifold (740) and the coolant exhaust manifold (744) are formed at the bottom side of the stack.

In contrast, claim 1 requires that the air-releasing passage be positioned above the coolant discharge passage at the other vertical end of the separator. That is, the air-releasing passage of the present application is provided at the vertical end of the separator where the coolant discharge passage is formed. In the Guthrie reference, however, the coolant gas vent (742) is provided at the vertical end where the coolant inlet manifold (740) is formed. See Guthrie, Figure 11. The Guthrie reference does not teach or suggest that the air-releasing passage is positioned above the coolant discharge passage at the other vertical end of the separator, as recited in amended claim 1.

The Gyoten reference is cited by the Examiner to provide teachings for the feature that the separator includes metallic plates. The Gyoten reference, however, does not teach or suggest that the air-releasing passage is positioned above the coolant discharge passage at the other vertical end of the separator, as recited in amended claim 1. There is no disclosure in the Gyoten reference of the air-releasing passage recited in claim 1.

For at least the reasons set forth above, Applicants respectfully submit that the combination of the Guthrie and Gyoten references fails to teach or suggest all of the limitation of amended claim 1. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 1.

In addition to the above distinction, Applicants also respectfully submit that the combination of the Guthrie and Gyoten references does not teach or suggest that “said coolant supply passage is provided at a middle position of one vertical end of said separator, and said coolant discharge passage is provided at a middle position of the other vertical end of said separator,” as recited in amended claim 1.

In the Guthrie reference, the coolant inlet manifold (740) and the coolant exhaust manifold (744) are formed at the bottom side of the stack. The Guthrie reference, however, does

not teach or suggest that the coolant supply passage is provided at the middle position of one vertical end of the separator, and the coolant discharge passage is provided at the middle position of the other vertical end of the separator, as recited in amended claim 1.

The Gyoten reference is cited by the Examiner to provide teachings for the feature that the separator includes metallic plates. The Gyoten reference, however, does not teach or suggest that the coolant supply passage is provided at the middle position of one vertical end of the separator, and the coolant discharge passage is provided at the middle position of the other vertical end of the separator, as recited in amended claim 1. There is no disclosure in the Gyoten reference of the structure of the coolant supply passage and the coolant discharge passage recited in the present application.

The Examiner asserts that “[t]he positioning of the coolant supply and discharge passages in lieu of those used in the references solves no stated problem and would be an obvious matter of design choice within the skill of the art.” See Office Action, page 4. Applicants respectfully disagree.

Applicants respectfully submit that the above feature of the present application provides advantages over the cited art and is not an obvious matter of design choice within the skill of the art. For example, the Guthrie reference teaches that the coolant inlet manifold (740) and the coolant exhaust manifold (744) are formed at the bottom side of the stack, and the coolant flows in an inverted U-shape pattern. Therefore, the coolant travels a relatively long path in the Guthrie reference.

In contrast, the coolant supply passage and the coolant discharge passage of the present application are provided at the middle position of respective vertical ends of the separator. The coolant flows from the middle position of one vertical end of the separator to the middle position of the other vertical end of the separator. Therefore, the present invention reduces the flow path

of the coolant and distributes the coolant uniformly along the surface of the separator. The Guthrie reference does not provide the above advantages of the present application.

In addition, the present application reduces the height of the separator by providing the coolant supply passage and the coolant discharge passage at the middle position of the vertical ends of the separator. The Guthrie reference, however, increases the height of the stack because the coolant inlet manifold (740) and the coolant exhaust manifold (744) are formed at the bottom side of the stack. The Guthrie reference does not provide the above advantages of forming a low-height fuel cell stack.

For at least the reasons set forth above, the above feature of the present application is not an obvious matter of design choice over the cited art. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 1.

B. Claims 2, 3, 5 and 6

Claim 3 is canceled. Therefore, the rejection of claim 3 is moot. Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 3.

Claims 2, 5, and 6 depend from amended claim 1 and, as such, incorporate the subject matter recited in amended claim 1. For at least the reasons set forth above with respect to claim 1, Applicants respectfully submit that the Guthrie and Gyoten references fails to teach or suggest all of the limitation of claims 2, 5, and 6. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 2, 5, and 6.

II. Conclusion

In view of the above comments, Applicants believe that the pending application is in condition for allowance and urges the Examiner to pass the claims to allowance. Should the

Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicant's attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. TOW-051RCE2. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

Dated: January 29, 2008

Respectfully submitted,

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